

Claims

1. An optical fibre connector (1) for forming a mechanical splice between first and second bare optical fibres (9) stripped of coatings, the connector comprising a connector body that is divided into at least two parts (3, 5) along at least part of a length thereof, arranged such that the optical fibres may be clamped between the parts and that comprises at least two independently openable main clamping sections (23) dimensioned to clamp directly onto the bare fibre of the first and second optical fibres, characterised in that the connector body includes at least one additional independently openable clamping section (25) dimensioned to clamp onto a coated portion of one of the optical fibres, and the clamping sections are arranged such that the first optical fibre may be clamped by a first of the main clamping sections independently of the second optical fibre, enabling the clamping of the first fibre against rotational and axial movement with respect to the connector body to remain substantially undisturbed by subsequent clamping or unclamping of the second fibre.
2. A connector according to claim 1, comprising three independently openable main clamping sections.
3. A connector according to claim 2, in which a first of the three main clamping sections (23a) is arranged to clamp onto the first fibre only, a second of the three main clamping sections (23c) is arranged to clamp onto the second fibre only, and a third of the three main clamping sections (23b) is arranged to clamp onto both of the first and second fibres.
4. A connector according to claim 1, in which one or both of the connector body parts includes a groove (7) such that when the parts are assembled together the groove(s) form a channel extending through the body arranged to accommodate the optical fibres.
5. A connector according to claim 4, in which the main clamping sections and the channel of the connector body are configured to clamp the bare fibre of the first and second optical fibres in the channel.

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6. A connector according to claim 1, comprising at least two said additional independently
5 openable clamping sections (25) dimensioned to clamp onto coated portions of the optical
fibres.

7. A connector according to claim 1 or 2, comprising at least five clamping sections.

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8. A connector according to claim 4, in which the channel has a first region, and a second
region of greater diameter than the first region at each end of the first region.

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9. A connector according to claim 8, in which the channel has a third region of greater
diameter than the second region at the end of each second region remote from the first region.

10. A connector according to claim 9, wherein at least the second and/or third regions of the
20 channel are substantially circular in cross-section.

11. A connector according to claim 9 or 10, in which the third regions of the channel are
dimensioned to accommodate buffer coatings of the optical fibres in a tight clamping fit.

12. A connector according to claim 8, in which the first region of the channel is
25 dimensioned to accommodate bare optical fibres stripped of coatings in a tight clamping fit.

13. A connector according to claim 8, in which the second regions of the channel are
dimensioned to accommodate primary coatings of the optical fibres in a tight clamping fit.

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14. A connector according to claim 1, further comprising a resilient clamp member arranged
5 to retain the parts of the connector body together such that the optical fibres are clamped
between the parts.

15. A connector according to claim 1, having at least one clamping section arranged to
clamp a fixing member that is fixed to a respective optical fibre such that the fixing member is
10 secured in the connector body when the fibres are spliced.

16. A connector according to claim 15, arranged to clamp the or each fixing member so as to
retain a desired rotational orientation and axial position of its respective fibre in the connector.

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17. A connector according to claim 4, further comprising at least one plug arranged to close
an end of the channel when an optical fibre is not installed in that end of the channel.

18. A connector according to claim 4, in which the assembled connector body comprises a
20 plurality of the said channels arranged to accommodate the plurality of first and second optical
fibres.

19. A connector according to claim 4, including alignment means for aligning the first and
second optical fibres with each other.

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20. A connector according to claim 19, in which the alignment means comprises an
alignment member in which the first and second optical fibres may be received and aligned.

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21. A connector according to claim 20, in which the alignment member comprises a tube, or at least one plate, each tube or plate having an aperture therein for a respective one of the first and second fibres.

5 22. A connector according to claim 21, in which the or each tube or plate includes a lens to assist in coupling light between the first and second optical fibres.

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